DP-304989

REFORMER SYSTEM PROCESS

ABSTRACT

A process for removing contaminants from a reformer comprises removal of particulate matter under operating, or stand-by conditions, or at the start of a shutdown procedure, by introducing a gas mixture to the reformer system having an oxidant-to-fuel ratio concentration leaner than a normal oxidant-to-fuel ratio concentration and at a gas flow rate less than a peak flow rate. The process produces elevated temperatures at the reformer inlet and elevated levels of carbon dioxide and water that combine to remove the contaminants. Another embodiment includes removal of particulate matter during a shutdown procedure by cycling the flow of fuel and air on and off; monitoring an exit temperature of a catalyst substrate and alternatively, cycling the oxidant flow on and off when the exit temperature is less than or greater than a threshold temperature such that the exit temperature of the catalyst substrate is maintained below the temperature at which aging of the catalyst and/or a washcoat material may occur. These methods may be used individually or in combination to improve the durability and performance of the fuel reformer.